CLAIMS:

1. An optical fiber connector in which a lens is formed at a resin injection portion located at a front end of an optical fiber inserted in a connector main body,

wherein the connector main body includes a first pipe for receiving the optical fiber inside, and a second pipe for receiving the first pipe inside,

wherein the lens surface is formed by a dead weight and a surface tension of resin, and

wherein the lens is shaped taking into account a positioning error of the optical fiber with respect to an outer diameter of the connector.

2. The optical fiber connector as set forth in Claim 1, wherein the connector main body is made of stainless steel.

3. The optical fiber connector as set forth in Claim 1 or 2, wherein the lens is made from a plurality of resins having different refractive indexes.

4. The optical fiber connector as set forth in Claim 3, wherein a resin with the largest refractive index among the plurality of resins defines a surface of the lens.

5. A method for manufacturing an optical fiber connector in which a lens is formed at a resin injection portion located at a front end of an optical fiber inserted in a connector main body,

said method comprising:

a connector forming step of forming the connector main body by inserting a first pipe in a second pipe, wherein the first pipe receives the optical fiber inside, and the second pipe

receives the first pipe inside;

a fiber inserting step of inserting the optical fiber in the first pipe of the connector main body formed in the connector forming step; and

a lens forming step of forming a lens by injecting a

light-hardened resin or a thermosetting resin in the resin injection portion.

6. The method as set forth in Claim 5, wherein:

said lens forming step includes:

a first resin injecting and hardening step of injecting a first resin, made from a light-hardened resin or a thermosetting resin, into the resin injection portion, and hardening the first resin;

a second resin injecting step of injecting a second resin, made from a light-hardened resin or a thermosetting resin, onto the hardened first resin so as to form a pre-lens; and

a second resin hardening step of hardening the second resin so as to form the lens.

7. The method as set forth in Claim 6, wherein the second resin has a higher refractive index than the first resin.

8. The method as set forth in Claim 6 or 7, wherein the first resin and the second resin are UV-hardened resins, and are hardened by irradiation of ultraviolet light.

9. The method as set forth in any one of Claims 6 through 8, wherein:

in said second resin hardening step, the wavefront aberration of light that has transmitted through the pre-lens is measured, wherein the lens is so shaped as to have a wavefront aberration close to 0, taking into account a positioning error of the optical fiber with respect to an outer diameter of the connector, and wherein a lens surface is formed by a dead weight and a surface tension of the second resin.

10. An optical coupling apparatus, comprising:

a light source or optical information output means for outputting optical information;

an optical fiber connector as set forth in any one of Claim

1 through 4 for optically coupling with emitted light from the light source or the optical information output means; and

setting means having a groove for setting the optical fiber connector and the light source or the optical information output means thereon.